



**(055)** What is claimed is:

**(1)** (Original) A manual electro-hydraulic selective depth control system for establishing a set position of a device above the ground as the device is moved across a surface, the selective depth control comprising:

- a. a toggle input device for specifying a plurality of position settings;
- b. a device position sensor for determining a measured device position; and
- c. a hydraulic position control system having a programmable ground zero position and a programmable maximum depth position for the device, the hydraulic position control system maintains a set position corresponding to the measured device position within a specified position within a specified position window around a set position programmed relative to the ground-zero and maximum-depth position;
- d. wherein the toggle input device comprises:
- e. a working position that places the set position at a programmed position;
- f. a shallow position that places the set position at a minimum deployed depth;
- g. a zero position that places the hydraulic position control system in a permanent de-energized mode.

**(2)** (Original) The manual electro-hydraulic selective depth control system according to claim 1 wherein the toggle input device further comprises a window size control input for specifying a size for the position window use by the hydraulic position control system.

**(3)** (Original) The manual electro-hydraulic selective depth control system according to claim 1, wherein the device position sensor is a potentiometer-based system.

**(4)** (Original) The manual electro-hydraulic selective depth control system according to claim 1, wherein the device position sensor is an ultra-sonic

transducer-based system.

**(5) (Original)** The manual electro-hydraulic selective depth control system according to

claim 1, wherein the toggle input device further comprises:

- a. a set switch for setting the programmed position used when the toggle is in its current position to a new position of the device; and
- b. an up/down rocker switch for adjusting the current position of the device.

**(6) (Original)** The manual electro-hydraulic selective depth control system according to claim 5, wherein a shallow position corresponds to a programmable position having a default position 1.5 inches deeper than the ground-zero position.

**(7) (Original)** The manual electro-hydraulic selective depth control system according to claim 5, wherein a shallow position is slaved to the working position in that a manual raise of the hydraulic position control system will move the set position from the programmed working position automatically to the shallow position.

**(8) (Original)** The manual electro-hydraulic depth control system according to claim 5, wherein the programmed working position corresponds to a programmable position having a default position 3.0 inches deeper than the ground-zero position.

**(9) (Original)** The manual electro-hydraulic selective depth control system according to claim 1, wherein the manual electro-hydraulic selective depth control system further comprises a device position display unit comprising a numeric LED display element.

**(10) (Original)** The manual electro-hydraulic selective depth control system according to claim 9, wherein the numeric LED display element show depth in inches with a decimal point to show 1/10 of an inch.

**(11) (Original)** The manual electro-hydraulic selective depth control system according to claim 1, wherein the hydraulic position control system further comprises a remote two-way, two position, normally open solenoid valve.

**(12) (Canceled)** A manual electro-hydraulic selective depth control system for establishing a set position of a device above the ground as the device is moved across a surface, the selective depth control system comprising:

- a. a processor based unit; and
- b. a remote control unit; and,
- c. a three position toggle input device.

**(13) (New)** A manual electro-hydraulic selective depth control system for establishing a set position of a device above the ground as the device is moved across a surface, the selective depth control system having a hydraulic position control system enabling the slaving of a shallow position and a working position:

- a. an input device wherein the shallow position is slaved to the working position;
- b. an input device wherein the shallow position is not slaved to the working position; and
- c. a second input device wherein the working position and the shallow position are not slaved.

**(14) (Original)** The manual electro-hydraulic selective depth control system according to claim 13, wherein the shallow position is not slaved to the working position thereby having its own programmable depth, and in that a manual raise function of the hydraulic position control system will move the set position from

the shallow position to a full raise position.

**(15) (Original)** The manual electro-hydraulic selective depth control system according to claim 13, wherein the shallow position is slaved to the working position in that a manual raise of the hydraulic position control system will move the set position from the working position automatically to the shallow position.

**(16) (Original)** The manual electro-hydraulic selective depth control system according to claim 13, wherein the working position and the shallow position are not slaved and a manual lower function of the hydraulic position control system will move the set position from the full raise position to the working position, bypassing the shallow position.

**(17) (Canceled)** A manual electro-hydraulic selective depth control system for establishing a set position of a device above the ground as the device is moved across a surface, the selective depth control system comprising:

- a. an input device for specifying a plurality of position settings;
- b. a device position sensor;
- c. a processor control unit;
- d. a console control unit;
- e. a device position display unit; and
- f. one or more hydraulic manifolds having a solenoid valve.

**(18) (New)** A manual electro-hydraulic selective depth control system for establishing a set position of a device above the ground as the device is moved across a surface, the selective depth control system comprising hydraulic manifolds of different valve combinations; namely, from a solenoid activated valve, a counter-balance valve, a pressure reducing and relieving valve, and a check valve.

- a. a hydraulic manifold wherein a solenoid activated valve is coupled to a counter-balance valve , and a pressure reducing and relieving valve, and a check valve;
- b. another hydraulic manifold wherein a solenoid activated valve is coupled to a counter-balance valve, and a check valve; and
- c. yet another hydraulic manifold wherein a solenoid activated valve is coupled to a counter-balance valve .

**(19) (Original)** The manual electro-hydraulic selective depth control system according to claim 18, wherein one hydraulic manifold incorporates a solenoid activated valve coupled to a counter-balance valve, a pressure reducing and relieving valve, and a check valve; wherein,

- a. the solenoid activated valve is configured to stop the flow of oil to the hydraulic position control system
- b. the counter-balance valve is configured to prevent air ingestion, to act as a holding valve , and to act as a relief valve;
- c. the pressure reducing and relieving valve is configured to provide an adjustable and controlled pressure; and
- d. the check valve is configured to operate in conjunction with the pressure reducing and relieving valve for holding the controlled pressure.

**(20) (Original)** The manual electro-hydraulic selective depth control system according to claim 18 wherein another hydraulic manifold incorporates a solenoid activated valve coupled to a counter-balance valve, and a check valve; wherein,

- a. the solenoid actiovted valve is configured to stop the flow of oil to the hydraulic position control system
- b. the counter-balance valve is configured to prevent air ingestion, to act as a holding valve, and to act as a relief valve; and
- c. the check valve is configured to operate in conjunction with the counter-balance valve for holding the pressure.

**(21) (Original)** The manual electro-hydraulic selective depth control system

according to claim 18 wherein yet another hydraulic manifold incorporates a solenoid activated valve coupled to a counter-balance valve; wherein,

- a. the solenoid activated valve is configured to stop the flow of oil to the hydraulic position control system; and
- b. the counter-balance valve is configured to prevent air ingestion, to act as a holding valve, and to act as a relief valve.

**(22)** (Cancel) The manual electro-hydraulic selective depth control system according to claim 16, wherein the hydraulic position control system comprise a parallel series cylinder set.

**(23)** (Canceled) The manual electro-hydraulic selective depth control system according to claim 16, wherein the hydraulic position control system comprise a series cylinder set.

**(24)** (Canceled) The manual electro-hydraulic selective depth control system according to claim 16, wherein the hydraulic position control system comprises a single cylinder.